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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/077,907	02/20/2002	Tomohiro Chiba	018842.1204	2651

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EXAMINER

LEO, LEONARD R

ART UNIT	PAPER NUMBER
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3753

DATE MAILED: 10/03/2003

17

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/077,907

Applicant(s)

CHIBA, TOMOHIRO

Examiner

Leonard R. Leo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 18 August 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,2,4 and 5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4 and 5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_                      6) ☐ Other:

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## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 18, 2003 has been entered.

Claims 1-2 and 4-5 are pending.

### ***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "projection portions are positioned across the entire width of said refrigerant path" in combination with "the inner fin" in claims 1 and 4 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

Claim 2 is objected to because of the following informalities: the recitation of "said at least one second tube" should read -- said at least one second tube *plate* --. Appropriate correction is required.

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***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2 are rejected under 35 U.S.C. 102(b) as being anticipated by Ohara et al (Figures 3-6 and 8). The parallel sections between outer fins 3 in Figure 1 are read as a “plurality of heat transfer tubes.” Regarding claim 2, the recitation of “formed by deforming” is considered to be a method limitation in an apparatus claim, which bears no patentable weight in this instance. See MPEP 2113.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-2 and 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohara et al in view of Donaldson, Kato or Watanabe et al.

Ohara et al discloses all the claimed limitations except a flange portion folded along a central axis.

Donaldson discloses a heat exchanger comprising a plurality of stacked tubes 12 and fins *f* (Figure 1), the tube formed by a folded tube plate (14, 16) along flange portion (18, 19, 23) (Figure 2) for the purpose of ease of manufacture.

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Kato discloses a heat exchanger comprising a plurality of tubes 2 and fins 3 (Figure 1), the tube formed by a folded tube plate 14 along flange portion 20 (Figure 6) for the purpose of ease of manufacture.

Watanabe et al discloses a heat exchanger comprising a plurality of tubes 11 and fins 14 (Figure 1), the tube formed by a folded tube plate 20 along flange portion 32 for the purpose of ease of manufacture.

Since Ohara et al and Donaldson, Kato or Watanabe et al are both from the same field of endeavor and/or analogous art, the purpose disclosed by Donaldson, Kato or Watanabe et al would have been recognized in the pertinent art of Ohara et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Ohara et al a folded flange portion for the purpose of ease of manufacture as recognized by Donaldson, Kato or Watanabe et al.

Regarding claims 2 and 5, the recitation of "formed by deforming" is considered to be a method limitation in an apparatus claim, which bears no patentable weight in this instance. See MPEP 2113.

### ***Response to Arguments***

Applicant's remarks with respect to the finality of the Office action mailed July 3, 2003 are moot, since applicant has filed the instant RCE on August 18, 2003. However, for the record, the grounds of rejection has not changed throughout the entire prosecution history of this application. The 35 USC 103 rejection in view of Haruhiko and Bossart has been maintained while applicant has attempted to amend over the references. Haruhiko is very similar to the instant invention except the inclination of protrusions. The secondary reference of Bossart et al

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discloses that perpendicular and oblique protrusions are alternates of one another, where the perpendicular protrusion provides a greater pressure drop. The protrusions of both Haruhiko and Bossart et al extend across the "width" of the refrigerant path, since the protrusions clearly have a long and short dimension. The long dimension of the protrusions are not aligned or parallel with the refrigerant path, and therefore, extend across the "width." In fact, the protrusions of Haruhiko extend "perpendicularly" across the "width," and the protrusions of Bossart extend "obliquely" across the "width."

The rejection in view of Haruhiko and Bossart is withdrawn.

As evidenced by the Donaldson, Kato and Watanabe et al, a tube formed by two separate sheets and by a single folded sheet are well known alternates in the art of heat exchangers.

### ***Conclusion***

Any inquiry of a general nature, relating to the status of this application or clerical nature (i.e. missing or incomplete references, missing or incomplete Office actions or forms) should be directed to the Technology Center 3700 Customer Service whose telephone number is (703) 306-5648. Status of the application may also be obtained from the Internet: <http://pair.uspto.gov/cgi-bin/final/home.pl>

Any inquiry concerning this Office action should be directed to Leonard R. Leo whose telephone number is (703) 308-2611.



LEONARD R. LEO  
PRIMARY EXAMINER  
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September 30, 2003